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A publication devoted to the interests of food manufacturers and distributors, with special attention to fruit products, wines, ciders, fruit brandies, cordials; apple juice, grape juice, citrus juices, vegetable juices, fruit juice beverages of all kinds, extracts, flavors; jams, jellies, marmalades, apple butter, evaporated apples, pie fillers and canned fruits of all kinds; dehydrated foods; frozen pack foods; tomato juice and tomato juice cocktails; by-products of the fruit industries, pomace and pectin; vinegars, mustard, pickles, sauces, mayonnaise, relishes and other condiments in which vinegar is used.

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VOLATILE FRUIT CONCENTRATES NOW FREE FROM TAX

To the Editor,
Fruit Products Journal:

BECAUSE of the active commercial interest in our process for production of volatile fruit concentrates, we have endeavored to keep industry promptly informed of any significant developments which pertain to this subject.

As these volatile fruit concentrates are produced by distillation and generally contain a half percent or more of alcohol, they have been subject to the usual taxes and restrictions on such products. However, on August 17 a bill, H.R. 5270, which exempts volatile fruit concentrates of reasonable alcohol content from certain taxes and other restrictions, was signed by the President and became Public Law 240, 81st Congress. This Act amends subchapter E of chapter 26 of the Internal Revenue Code.

The regulations pertaining to this amendment define the limits of alcohol content and the conditions under which volatile fruit concentrates may be produced and used. These regulations have now been published in the Federal Register of September 27, 1949, pages 5869 to 5879, inclusive. Copies of this issue may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C. The regulations became effective on the date of publication in the Federal Register.

Inquiries concerning the new code should be addressed to Mr. Carrol E. Mealey, Deputy Commissioner, Alcohol Tax Unit, Treasury Department, Washington, D. C.

P. A. WELLS, Director

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Co-ops Important in Some Food Processing Fields, Not in Others

LATEST figures on how much of the 1947-48 fruit and vegetable crops were processed by agricultural cooperatives show more volume and a greater percentage of the United States total crop for some commodities, the exact reverse in some others, according to a report issued by the Farm Credit Administration, U. S. Department of Agriculture.

Cooperatives have doubled the amount of frozen fruits handled over the figure for 1945-46, and they froze almost a fifth of all the principal fruits frozen in the 1947-48 season. They also made a slight gain in the amount of canned fruits and vegetables, handling about 12 per cent of the canned diciduous fruits and a little over 4 per cent of the canned vegetable crop.

Cooperatives processed about the same proportion of the citrus pack as the year before—28 per cent. Cooperatives slipped back in the amount of frozen vegetables, tives processed more than three-fourths of the total United States production of nuts, more than a fourth of the dried fruit, about a third of the olives, and more than a fifth of the wine and brandy.

On a volume basis, cooperatives froze nearly 59 million pounds of deciduous fruits and berries, and 6.7 million pounds of vegetables in 1947-48. They canned almost 17.5 million cases of citrus juices and segments and 10 million cases of other fruits, and fruit products. They canned 7.7 million cases of vegetables.

Sales value of the cooperative pack for major horticultural products in 1947-48 totaled nearly $230 million, a decrease of about $55 million from the previous year.

differences in foods which measure the sensation-producing qualities of odor, taste, flavor, juiciness, color, texture and appearance should be sharply divided into tests for the amount of a quality and for preference of a quality. Failure to recognize the distinction between these two types of tests is the cause of much confusion in methodology and in the interpretation of results.

Purpose of this report is to point out factors which are related to reliability in analytical tests for the amount of a quality, and to present results of studies made to determine the importance of some of these factors.

In analysis tests on foods by a laboratory panel, maximum sensitivity is a necessity. Judges must be selected for their ability to consistently detect the kind and degree of differences which occur in the particular experiment. Experimental data are given on selection of judges and on factors which might affect the performance of the judges themselves.

STUDIES ON HUMAN APPETITE

Franz R Goetzl, Ph.D., M.D., Medical Research Dept., The Permanente Foundation, Oakland, Calif.

STUDIES on human appetite are important for theoretical and practical reasons. A better understanding of the physiological mechanisms involved in the sensation complex governing selection of food would obviously contribute a great deal to the science of medicine, food acceptance, food acceptability, and others.

The present studies are designed to demonstrate that a person desirous of food differs fundamentally from one satisfied by a meal. Observations were made to indicate that the acuity of olfaction fluctuates during a day's period. It increases before and decreases after meals. The change in olfactory acuity accompanies the conversion of the sensation of appetite into one of satiety, and therefore may be useful for evaluating the intensities of these sensations and also for evaluating the ability of food to bring about the desired change in sensation.

QUANTITATIVE DETERMINATION OF FLAVOR AND ODOR OF FROZEN FRUITS AND VEGETABLES

John B. Wegener, Carl M. Hill, Ruby M. Prigmore and Mary E. Hill, TVA and Tennessee Agricultural & Industrial State College, Knoxville, Tennessee

THE flavor and odor of fruits and vegetables are generally evaluated by organoleptic tests which, when used alone, are too subjective to be reliable. Most chemical methods reported are based upon detection and estimation of specific chemical substances in the odor of foods as an index to quality level. Limitations of such methods prohibit their general application.

Through this investigation, a chemical procedure has been employed which estimates quantitatively the amounts of volatile reducing substances in the internal atmosphere of frozen fruits and vegetables indigenous to the Tennessee Valley area. This method is based upon quantitative oxidation of volatile reducing substances by an alkaline solution of potassium permanganate. Analytical results are expressed in terms of microequivalents.

It is generally known that, with time, the internal atmosphere of fruits and vegetables changes in chemcial composition. Further, it has been shown that the amount of volatile reducing substances in odors of foods increases and organoleptic properties change as spoilage sets in. Through correlation of organoleptic properties and concentration of volatile reducing substances, evaluation of quality levels of samples of a given variety treated variously, and of samples of different varieties with identical processing histories, has been made.

NEW SYNTHETICS FOR FLAVORS

Abraham Seldner, F. Ritter & Co., Los Angeles

THE number of synthetics potentially of value to the flavor industry is unlimited. The object of our continuing research is to seek them out and develop their syntheses on a semi-commercial scale.

There are several sources of these new materials. The isolation of a previously unknown compound present in a food suggests a material warranting investigation. Methyl-b-methylthiolpropionate (isolated from Hawaiian pineapple by Dr. A. J. Haagen-Smit) was reproduced in our laboratory, and it proved of great promise in flavor formulation. Other investigations are directed at developing new synthetics from the constant flow of intermediates being made available, for the first time, on greater than laboratory scale. In addition, many requests are received for new or different flavor "notes." These are often achieved by slight modifications in the structure of a commonly used compound or by use of a known but rarely used compound.

THE ROLE OF BRUISING IN THE DEVELOPMENT OF "DELAY" OFF-FLAVOR IN PEAS

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ORGANOLEPTIC appraisal of Giant Stride peas indicated no development of off-flavors in unbruised (carefully hand-shelled) peas held up to 30 hr. at room temperature. Neither was there any detectable off-flavor in bruised peas which were cooked without delay. Peas bruised by tumbling and then held for 5 hr. or longer at room temperature developed a pronounced "delay" off-flavor. The same off-flavor was observed in peas treated similarly, but kept free of microorganisms. The amount of this off-flavor as measured by comparison with unbruised, undelayed peas (freshly hand-shelled) increased with: (1) Degree of bruising, (2) time of holding (delay), and (3) temperature. The flavor of peas submerged under water at 0, 8 and 24 deg. C. depended more on the factors of bruising and temperature (particularly at the lower temperatures) than on that of submergence. Treatments detrimental to flavor were also detrimental to skin texture and, usually, to color, as measured by subjective scores.